

A New Subgenus and a New Species of *Greggelix*

(GASTROPODA : SIGMURETHRA : HELMINTHOGLYPTIDAE)

from the Sierra San Pedro Martir, Baja California, Mexico

BY

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(1 Plate; 2 Text figures)

SEVERAL YEARS AGO, the late Allyn G. Smith, at the California Academy of Sciences, noticed two strange lots of shells collected by John Figg-Hoblyn on 24 and 25 March 1954 (CASIZ 025105 and CASIZ 025106) in Cañon Diablito and Cañon del Diablo, respectively, San Pedro Martir Mountains, Baja California. He tentatively labelled these shells *Sonorelix* sp. and referred them to me for further study. Without reproductive anatomies, however, it was impossible to determine their generic affiliations.

Accordingly, on 16 May 1970, I organized an expedition to the Cañon del Diablo area where John Figg-Hoblyn had collected the shells, for the purpose of obtaining live animals. Because of our unfamiliarity with the area, we mistook Cañon Diablito, which opens at the end of the dirt access road, for Cañon del Diablo, which opens about one mile north of the road, and we collected only in Diablito. Nevertheless, I found one live adult and my colleague, Richard H. Russell, found one live juvenile, which I subsequently raised to adulthood. Both specimens were found to have an anatomy closely resembling that of *Greggelix* W. B. Miller, 1973. One striking feature was the presence of vestigial mucus glands on the vagina, a characteristic that I have observed in only one other helminthoglyptid, namely *Greggelix loehri* (Gabb, 1868) (Miller, 1981: 736, 737).

The shell characters, however, were significantly different from those of the known species of the genus, namely *Greggelix loehri* (Gabb, 1868), *G. indigena* (Mabille, 1895), and *G. punctata* W. B. Miller, 1981. A subgeneric status, in the genus *Greggelix*, appeared indicated for this new species, but the question immediately arose to whether the vestigial mucus glands were an abnormal singularity or a consistent characteristic of the species.

An opportunity for additional collecting did not occur until 15 March 1981 when my colleagues, Noorullah

Babrakzai and Richard L. Reeder, and I made a determined effort to collect a statistically sufficient sample of live animals, from Cañon Diablito as well as from Cañon del Diablo. Two days of arduous digging in rock piles yielded four live adults from Cañon Diablito and eight live adults and two live juveniles from Cañon del Diablo. The 12 adults were dissected and all showed vestigial mucus glands, with ten specimens showing one gland and the other two showing two glands. Accordingly, a new species and a new subgenus can now be described with confidence.

Martirelix W. B. Miller, subgen. nov.

Shell relatively small for the genus, with elevated, broadly-conic spire, relatively narrow umbilicus, and moderately reflected peristome. Reproductive structures generally as in *Greggelix* s.s. but with a verge consisting of a short, cylindrical shaft and a paraboloid tip. Mantle collar and edge of foot with a bright orange mucus.

Type species: *Greggelix (Martirelix) babrakzai* W. B. Miller, spec. nov.

The smaller, more globose, generally higher spired shell is the main differentiating external character of this subgenus. In *Greggelix* s.s., the spire is usually almost flat, the umbilicus is very wide, and the peristome is strongly reflected. In the living animal, the orange mucus of *Martirelix* immediately separates it from *Greggelix* s.s., whose mantle collar and edge of foot have a bright chartreuse to green color. In its anatomy, *Martirelix* has the unusually long spermathecal diverticulum and epiphallic caecum of the genus, although the latter is not quite as long as in *Greggelix*, s.s. Moreover, the verge is short cylindrical, with a paraboloid tip, whereas in *Greggelix* s.s. it is almost perfectly spherical.

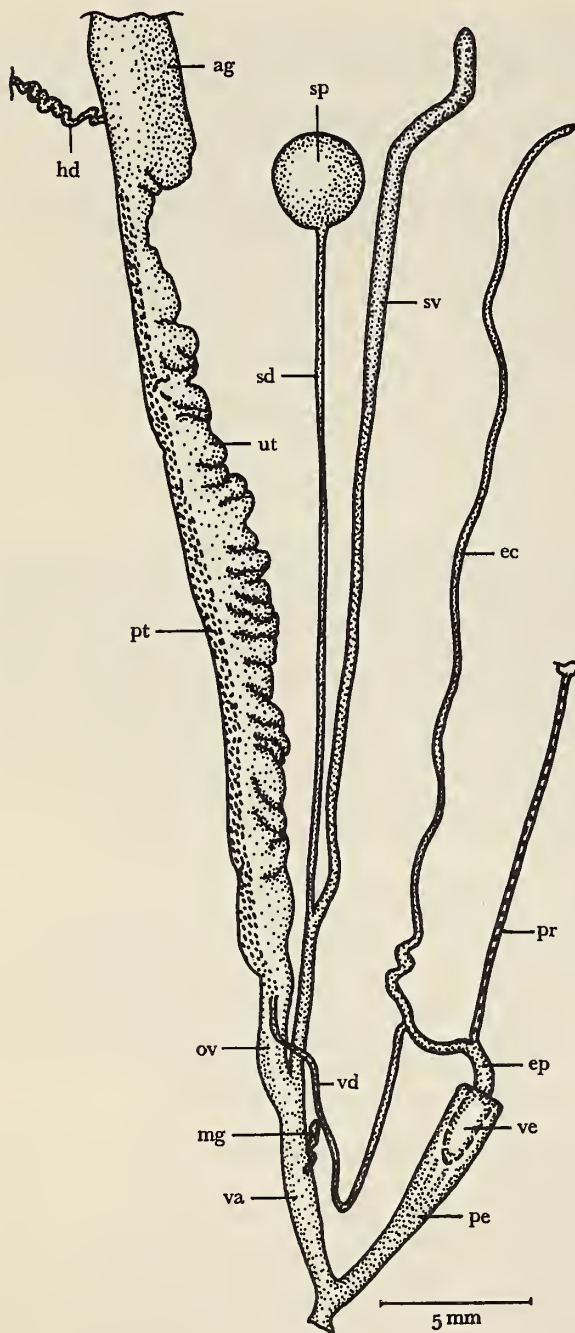


Figure 1

Greggelix (Martirelix) babrakzaii W. B. Miller, spec. nov.

Reproductive system of holotype; ovotestis and part of albumen gland omitted. Drawing made from projection of stained whole mount.

ag—albumen gland; ec—epiphallallic caecum; ep—epiphallus; go—genital orifice; hd—hermaphroditic duct; mg—mucus gland; ov—oviduct; pe—penis; pr—penial retractor; pt—prostate; sd—spermathecal duct; sp—spermatheca; sv—spermathecal diverticulum; ut—uterus; va—vagina; vd—vas deferens; ve—verge

Martirelix is currently monotypic. The type species is equipped with one or two vestigial mucus glands attached to the vagina, a character also found in *Greggelix (Greggelix) loehri* but not in *G. (G.) indigena* or *G. (G.) punctata*.

To date, *Martirelix* is known only from Cañon Diablito and Cañon del Diablo, Sierra San Pedro Martir, Baja California. Shells tentatively referable to this subgenus have also been collected in the Sierra la Libertad southwest of Bahía de Los Angeles, some 300 km to the southeast, but specific identification will have to await the availability of live animals.

The name *Martirelix* is feminine. It is a composite formed from the locality name, San Pedro Martir, and the Greek *helix* (coiled, spiral) which has been used repeatedly in malacology to refer to helicoid land snails.

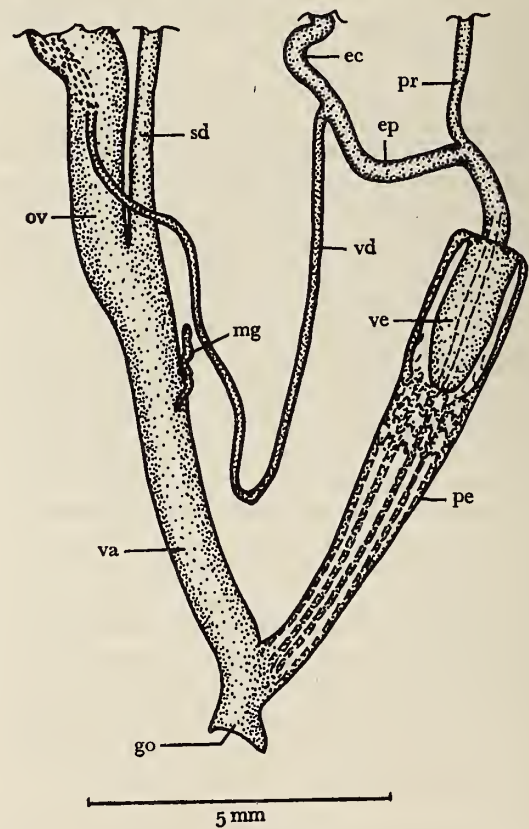


Figure 2

Greggelix (Martirelix) babrakzaii W. B. Miller, spec. nov.

Distal reproductive structures of holotype, showing internal features of penis and relative size and position of mucus gland.

Greggelix (Martirelix) babrakzaii W. B. Miller, spec. nov.

Diagnosis: A small sized, globose *Greggelix* with well-formed umbilicus partly covered by reflected peristome



Figure 3



Figure 4



Figure 5

Greggelix (Martirelix) babrakzaii W. B. Miller, spec. nov.

Shell of Holotype, CAS no. 025103; diameter 20.5 mm

Figure 3: Apertural view. Figure 4: Apical view. Figure 5: Umbilical view.

